

## Wieland-Z90 Machining brass

## Extruded/drawn products

Wieland-Z90 is a high-copper machining brass with excellent cold working and good machining properties. It is used in the USA for cylinder tubes and mainly for sanitary applications.

Chemical composition*		Material designation	
Cu	67%	EN	not standardized
Pb	0.6%		(~CuZn32Pb1)
Zn	balance	UNS	C33000
		DIN*	not standardized
		BS*	not standardized
		NF*	not standardized

\* Reference values in % by weight

\* Former national standards

Physical properties*			Fabrication properties		Corrosion resistance
Electrical conductivity	MS/m	15.1	<b>Forming</b>		Machining brass is generally quite resistant against organic substances as well as neutral or alkaline compounds.  *Stress corrosion cracking and dezincification in warm, acidic waters should be taken into account, especially in an ammoniacal atmosphere and whilst under mechanical stress.
	% IACS	26	Machinability	60%	
Thermal conductivity	W/(m*K)	117	(CuZn39Pb3 = 100 %)		
			Capacity for being cold worked	excellent	
Thermal expansion coefficient (0-300°C)	10 <sup>-6</sup> /K	20.2	Capacity for being hot worked		
			fair		
Density	g/cm <sup>3</sup>	8.5	<b>Joining</b>		
			Resistance welding	fair	
Modulus of elasticity	GPa	105	Inert gas shielded arc welding		
			poor		
			Hard soldering	good	
			Soft soldering		excellent

\* Reference values at room temperature

1 GPa = 1 kN/mm<sup>2</sup>

1 MS/m = 1 m/Ω • mm<sup>2</sup>

Surface treatment			Product standards
Polishing	mechanical	excellent	
	electrolytic	good	
Electroplating		excellent	
Heat treatment			
Melting range		905-940 °C	
Hot working		750-870 °C	
Soft annealing		450-650 °C, 1-3 h	
Thermal stress-relieving		200-300 °C, 1-3 h	

## Mechanical properties (values can be achieved and are a function of size and form)

Reference values	from (soft/extruded)	to (hard)
R <sub>m</sub> [MPa]	330	540
R <sub>p0.2</sub> [MPa]	100	470
A <sub>5</sub> [%]	50	10
HB	65	140

## Forms and sizes available

Material										
Wieland	EN designation		Outside diameter		Wall thickness		Circumscribing diameter		Diameter / width across flats	
	Brief designation	Number	from	to	from	to	from*	to	from	to
Z90	CuZn32Pb1	not stand.	8	120	0.2	8				
Round tubes			8	120	0.2	8				
Drawn sections										
Extruded sections										
Sectional tubes								90		
Round and polygonal rods										
Round wires										
Polygonal wires										

**Wieland - Z90**

All values in mm

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